

South Dakota AFNR

Academic Integration Activities: Example #1

→ *Agribusiness Entrepreneurship students use rounding as an estimation strategy to solve problems related to operating a business.*

1. Ag Standard

Agribusiness Entrepreneurship—E2.1

Distinguish key accounting fundamentals to accomplish dependable bookkeeping and associated files.

- > Develop production and agribusiness records.
- > Prepare and interpret financial statements from a given set of financial information to include balance sheet, profit/loss statement, and cash flow statement.

2. Academic Standard

9-12.N.3.1

Students are able to use estimation strategies in problem situations to predict results and to check the reasonableness of results. (Analysis)

- > Use rounding as an estimation strategy.

3. Background Information

One type of estimation strategy is rounding. Rounding can be used to predict results and check the reasonableness of results.

Rounding Digit

When asked to round to the closest tens, the rounding digit is the second number to the left (ten's place). When asked to round to the nearest hundred, the third place from the left is the rounding digit (hundred's place).

Steps to Rounding Whole Numbers

- a. Determine rounding digit and look to the right side of it.
- b. If the digit is 0, 1, 2, 3, or 4 do not change the rounding digit.
- c. If the digit is 5, 6, 7, 8, or 9, the rounding digit rounds up by one number.
- d. All digits on the right-hand side of the requested rounding digit will become 0.

Steps to Rounding Decimals

- a. Determine rounding digit and look to the right side of it.
- b. If the digit is 4, 3, 2, or 1, drop all digits to the right of it.
- c. If the digit is 5, 6, 7, 8, or 9, add one to the rounding digit and drop all digits to the right of it.

Example

765.3682 becomes:

1000 when asked to round to the nearest thousand (1000)

800 when asked to round to the nearest hundred (100)

770 when asked to round to the nearest ten (10)

765 when asked to round to the nearest one (1)

765.4 when asked to round to the nearest tenth (10th)
765.37 when asked to round to the nearest hundredth (100th)
765.368 when asked to round to the nearest thousandth (1000th)

4. Example in Context

Assume a student has a pickle production business. They produce an average of 46 jars of pickles per day. Is it possible to produce 500 jars in one week?

The number to the right of the tens place is 6. Since that is greater than 5, round up.

Round 46 to the nearest tens place ($46 \approx 50$).

50×7 days per week = 350

Answer: No, it would not be possible to produce 500 jars in one week at that rate.

5. Guided Practice Exercises

Assume a student works at a flower shop. They sell 7 bouquets of flowers per week for \$19.54 each. Will the monthly income from flower bouquets be more than \$400?

Round \$19.54 to the nearest tens place. The number to the right of the tens place is 9. Since that is greater than 5, round up.

Round 19.54 to the nearest tens place ($19.54 \approx 20$).

$\$20 \times 7$ days per week = \$140

Round 140 to the nearest tens place ($140 \approx 150$). They make \$150 per week on flower bouquets.

Multiply \$150 per week times 4 weeks in a month to get monthly income.

$150 \times 4 = 600$

Answer: Yes, 600 is greater than 400, so the monthly income from flower bouquets is greater than \$400.

6. Independent Practice Exercises

Assume a student plans to sell some of his own cattle. He plans to sell 22 head of steers for \$987.12 each. Will his check be about \$20,000?

Answer: Yes. ($20 \times 1,000 = 20,000$)

Assume a student works at a welding shop. They build 31 feed bunks per month and sell each for \$197.99. Will the income from feed bunks after 6 months be about \$36,000?

Answer: Yes. ($30 \times 200 = 6,000$; $6,000 \times 6 = \$36,000$)

7. Notes

An Agribusiness Entrepreneurship teacher could challenge her students by issuing a worksheet that involves estimations in the business world. She first would review how to use rounding as a strategy. Her goal is to improve students' ability to predict results and check reasonableness of results that are related to accounting fundamentals of their self-developed businesses.